REMARKS

Claims 1-16, 21 and 22 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the invention. Applicant respectfully submits that the rejection of claim 7 appears to be a mistake, as the cited limitation does not appear in the claim language. Applicant has, however amended claims 1, 6, 9, 21 and 22 and respectfully submits that they are now in condition for allowance.

Claims 21-22 have been rejected under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent No. 6,085,090 to Yee et al. (hereinafter "Yee"). Applicant respectfully traverses these rejections of record. However, Applicant has amended claims 21 and 22 to clarify the claimed subject matter and respectfully submits that claims 21 and 22 are now in condition for allowance.

Claims 1, 2, 9, and 10 have also been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,952,158 to Kennedy, Jr. (hereinafter "Kennedy"). Applicant respectfully traverses these rejections of record. Applicant has amended claims 1 and 9 and canceled claims 2 and 10 without prejudice, and respectfully submits that claims 1 and 9 are now in condition for allowance.

Claims 3-5 and 11-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kennedy, further in view of U.S. Patent App. Pub. No. 2003/0186724 to Tsutsumi et al. (hereinafter "Tsutsumi"). Applicant also respectfully traverses these rejections of record.

Claims 6, 7, 14 and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kennedy, further in view of U.S. Patent App. Pub. No. 2005/0059396 to

Chuah et al. (hereinafter "Chuah") Applicant also respectfully traverses these rejections of record.

Claims 8 and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kennedy in view of Well Known Prior Art. Applicant also respectfully traverses these rejections of record.

Rejections under 35 U.S.C. § 102

Rejections Of Claims 21 And 22 As Being Anticipated By Yee

Yee relates generally to a mobile communications device incorporating a GPS receiver (*See* Yee, col. 3, lns. 13-24). The portions of Yee cited by the Examiner relate to the use of a "sleep interval" by the mobile device to reduce power consumption by reducing the frequency at which the device determines its location. The mobile device alters the duration of the "sleep interval" based on the distance traveled in between location checks. (*Id.*, col. 8, lns. 16-63).

However, Yee fails to disclose or suggest at least the claimed step of "determine location data by comparing only said signal strength data to said database" as in amended claims 21 and 22. Yee uses a GPS receiver to determine the location of the device. The GPS system uses time-difference techniques to determine the location of devices (*See Id.*, col. 6, lns. 6-37). In contrast, the present invention as claimed in amended claims 21 and 22 uses only the strength of reference signals to determine the location of devices in the system.

By using only reference signal strength to determine location, the equipment necessary to implement the invention of claims 21 and 22 may be greatly simplified. As described in **¶¶0019** and **0020** of the specification, the reference signal transmitters of the present invention are only required to transmit a fixed message including an identification code. Because the transmitted time the signal is not used to determine location, the reference signal transmitters do not require a GPS receiver or wireless LAN transmitter, as in Kennedy. As a result, the transmitters are inexpensive to manufacture and require no wiring or setup for installation.

Nothing in the cited portions of Yee discloses or suggests at least the feature of "determine location data by comparing only said signal strength data to said database." Accordingly, for at least this reason, Applicant respectfully submits that claims 21 and 22 should be allowed over the cited prior art.

Rejections Of Claims 1, 2, 9, and 10 As Being Anticipated By Kennedy

The present invention relates to a method for locating a mobile device connected to a wireless local area network by measuring the received signal strengths of signals transmitted by reference transmitters. Amended independent claim 1 recites:

> A method for locating mobile units within an area using a wireless local area network, comprising:
>
> providing reference signal transmitters at selected fixed locations within said area;
>
> transmitting reference signals using said reference signal transmitters using a first selected channel of said wireless local area network;
>
> providing a computer having a database *relating signal strengths of signals transmitted by said reference signal transmitters to location* within said area;
>
> providing at least one access point coupled to said computer and providing wireless data communications between said computer and at least one mobile unit in said area using one or more channels of said wireless local area network that are different from said first selected channel;
>
> receiving a selected plurality of said reference signals at said at least one mobile unit, determining signal strengths of said received

> reference signals and transmitting data representing only said received reference signal strengths to said computer via said at least one access point using said one or more data communications channels; and
>
> receiving said data representing *only reference signal strengths* at said computer and determining position of said mobile unit using said database. (emphasis added)

Claim 9 recites similar features to claim 1.

Kennedy relates generally to a system for determining the location of autonomous mobile appliances using timing measurements from reference signals to determine position. (*See* Kennedy, Abstract, col. 1, lns. 16-29). A GPS receiver is used to provide a common time reference for the mobile devices and the base stations and thereby allow proper time measurements. (*Id.*, col. 1, lns. 39-41). The mobile devices receive signals from multiple reference transmitters and record the amplitude and time differences of the received signals. (*Id.*, col. 9, lns. 3-11). The information is transmitted to a base station, which uses the time-difference and amplitude information to determine the general "subarea" of the mobile device. (*Id.*, col. 9, lns. 49-50). The processor uses this "subarea" determination to identify which transmitters' signals were received by the mobile device. Then, using standard time-difference-on-arrival (TDOA) techniques, the location of the mobile device is determined (*Id.*, col. 9, ln. 64 - col. 10, ln. 9).

However, Kennedy fails to disclose or suggest at least the claimed steps of receiving said data representing only reference signal strengths at said computer and determining position of said mobile unit using said database, as recited in amended claims 1 and 9. Kennedy always requires the use of TDOA techniques to determine the location of the mobile device. In contrast, the present invention utilizes only the strengths of the reference signals received by the mobile device to determine the location of the mobile device. By using only reference signal strength to determine location, the equipment necessary to implement the invention may be greatly simplified because sophisticated, precise synchronization hardware is not required.

As described previously with respect to the claim rejections under Yee, the reference signal transmitters of the present invention are only required to transmit a fixed message including an identification code. (Specification, ¶¶**0019** and **0020**). Because the time the signal is sent is not needed to determine location, the reference signal transmitters do not require a GPS receiver or wireless LAN transceiver, as in Kennedy. As a result, the transmitters are inexpensive to manufacture and require no wiring or synchronization with the LAN for installation.

Nothing in the cited portions of Kennedy discloses or suggests at least the feature of "receiving said data representing only reference signal strengths at said computer and determining position of said mobile unit using said database". Accordingly, for at least this reason, Applicant respectfully submits that claims 1 and 9 should be allowed over the prior art.

Rejections under 35 U.S.C. 103(a)

Claims 3-16 have been rejected as allegedly being unpatentable over Kennedy as applied to claims 1 and 9, and further in view of various prior art. Applicant respectfully submits that because the references, even if viewed in combination, do not contain all the limitations of claims 1 and 9, as outlined above, and because claims 3-16 contain all of the limitations of claims 1 and 9 through dependency, claims 3-16 should also be allowed over the prior art.

CONCLUSION

In view of the foregoing remarks, Applicant respectfully submits that the pending claims are in condition for allowance. Applicant hereby authorizes the Commissioner to charge payment of any additional fees or credit any overpayment associated with this communication to Deposit Account No. 02-4377. In the event that the application is not deemed in condition for allowance, the examiner is invited to contact the undersigned in an effort to advance the prosecution of this application.

Respectfully submitted,

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